

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 December 2000 (07.12.2000)

PCT

(10) International Publication Number
WO 00/73469 A3

(51) International Patent Classification⁷: **C12N 15/54**,
9/12, 15/11, 5/12, C07K 16/40, A61K 38/00, G01N 33/68

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(21) International Application Number: PCT/US00/14842

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE,
DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID,
IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL,
PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ,
UA, UG, US, UZ, VN, YU, ZA, ZW.

(22) International Filing Date: 26 May 2000 (26.05.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/136,503 28 May 1999 (28.05.1999) US

(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG,
CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

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Published:

— with international search report

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(88) Date of publication of the international search report:
29 November 2001

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*



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(54) Title: PROTEIN KINASES

(57) Abstract: The present invention relates to kinase polypeptides, nucleotide sequences encoding the kinase polypeptides, as well as various products and methods useful for the diagnosis and treatment of various kinase-related diseases and conditions.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/54 C12N9/12 C12N15/11 C12N5/12 C07K16/40
A61K38/00 G01N33/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C12N C07K A61K G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, EMBL, MEDLINE, BIOSIS

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E	WO 00 58473 A (CURAGEN CORP ;LEACH MARTIN (US); SHIMKETS RICHARD A (US)) 5 October 2000 (2000-10-05) SEQ.IDs. 4435 and 4436 DOC. AGAINST INV. 1 (SEQ.IDs. 122, 4) SEQ.IDs. 5049, 5050, 5571, 5572 DOC. AGAINST INV. 67 (SEQ.IDs. 188, 70) SEQ.IDs. 3009 and 3010 DOC. AGAINST INV. 76 (SEQ.IDs. 197, 79) --- -/--	1,2,4-7, 11,12



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Date of the actual completion of the international search

22 June 2001

Date of mailing of the international search report

18. 07. 2001

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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P, X	<p>NAGASE T. ET AL.: "PREDICTION OF THE CODING SEQUENCES OF UNIDENTIFIED HUMAN GENES. XVI. THE COMPLETE SEQUENCES OF 150 NEW CDNA CLONES FROM BRAIN WHICH CODE FOR LARGE PROTEINS IN VITRO"</p> <p>DNA RESEARCH, vol. 7, 28 February 2000 (2000-02-28), pages 65-73, XP000923011 KIAA1297</p> <p>-& DATABASE EMBL 'Online! Accession Number AB037718, 14 March 2000 (2000-03-14)</p> <p>OHARA O. ET AL.: "Homo sapiens mRNA for KIAA1297 protein." XP002166247</p> <p>abstract DOC. AGAINST INV. 38 (SEQ.IDs. 159, 41) DOC. AGAINST INV. 39 (SEQ.IDs. 160, 42)</p> <p>-& DATABASE EMBL 'Online! Accession Number AB037759, 14 March 2000 (2000-03-14)</p> <p>OHARA O. ET AL.: "Homo sapiens mRNA for KIAA1338 protein." XP002167889</p> <p>abstract DOC. AGAINST INV. 67 (SEQ.IDs. 188, 70)</p> <p>-& DATABASE EMBL 'Online! Accession Number AB037790, 14 March 2000 (2000-03-14)</p> <p>OHARA O. ET AL.: "Homo sapiens mRNA for KIAA1369 protein." XP002167890</p> <p>abstract DOC. AGAINST INV. 68 (SEQ.IDs. 189, 71)</p> <p>-& DATABASE EMBL 'Online! Accession Number AB037781, 14 March 2000 (2000-03-14)</p> <p>NAGASE T. ET AL.: "Homo sapiens mRNA for KIAA1360 protein, partial cds." XP002168226</p> <p>abstract DOC. AGAINST INV. 82 (SEQ.IDs. 203, 85)</p> <p style="text-align: center;">---</p>	<p>1,2,4-7, 10-14, 16,25</p>
X	<p>KAWAI T. ET AL.: "Duet is a novel serine/threonine kinase with Dbl-Homology (DH) and Pleckstrin-Homology (PH) domains" GENE, vol. 227, no. 2, 18 February 1999 (1999-02-18), pages 249-255, XP004158739 ISSN: 0378-1119 the whole document DOC. AGAINST INV. 40 (SEQ.IDs. 161, 43)</p> <p style="text-align: center;">---</p> <p style="text-align: center;">-/--</p>	<p>1-14,29, 30,35-38</p>

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X	<p>DATABASE EMBL 'Online! Accession Number AA436054, 1 June 1997 (1997-06-01) HILLIER L. ET AL.: "Homo sapiens cDNA clone IMAGE:730582 5' similar to gb:X66363 serine/threonine-protein kinase pctaie-1" XP002166250 abstract DOC. AGAINST INV. 44 (SEQ.IDs. 165, 47)</p> <p>---</p>	1,2,4-7, 10-14,16
X	<p>DATABASE EMBL 'Online! Accession Number AA061797, 24 September 1996 (1996-09-24) MARRA M. ET AL.: "Mus musculus cDNA clone IMAGE:513953 5' similar to gb:X66358 serine/threonine-protein kinase." XP002166251 abstract DOC. AGAINST INV. 45 (SEQ.IDs. 166, 48) DOC. AGAINST INV. 46 (SEQ.IDs. 167, 49)</p> <p>---</p>	1,2,4,6, 7,10-13, 17
A	<p>WO 98 35015 A (GERHOLD DAVID L ;MERCK & CO INC (US)) 13 August 1998 (1998-08-13) SEQ.IDs.2 and 3 DOC. AGAINST INV. 50 (SEQ.IDs. 171, 53) DOC. AGAINST INV. 114 (SEQ.IDs. 235, 117)</p> <p>---</p> <p style="text-align: center;">-/--</p>	1-30, 35-38

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	NAYLER O. ET AL.: "Characterization and comparison of four serine- and arginine-rich (SR) protein kinases." BIOCHEMICAL JOURNAL, vol. 326, no. 3, 1997, pages 693-700, XP002166240 ISSN: 0264-6021 the whole document DOC. AGAINST INV. 51 (SEQ.IDs. 172, 54) ---	1-4, 6-13, 18, 26, 27
P, X	WO 99 38981 A (AKERBLOM INGRID E ; INCYTE PHARMA INC (US); CORLEY NEIL C (US); BAN) 5 August 1999 (1999-08-05) SEQ.IDs. 3 and 9 DOC. AGAINST INV. 51 (SEQ.IDs. 172, 54) SEQ.IDs. 6 and 12 DOC. AGAINST INV. 95 (SEQ.IDs. 216, 43) ---	1-14, 18, 26-30, 35-38
X	DATABASE EMBL 'Online! Accession Number AA839940, 2 March 1998 (1998-03-02) MARRA M. ET AL.: "Mus musculus cDNA clone IMAGE:1259911 5' similar to SW:KMLC_RAT P20689 myosin light chain kinase." XP002167891 abstract DOC. AGAINST INV. 55 (SEQ.IDs. 176, 58) ---	1, 2, 4, 6, 7, 10-13, 18
X	DATABASE EMBL 'Online! Accession Number AL031055, 10 July 1998 (1998-07-10) RAMSAY H.: "Human DNA sequence from clone RP1-28H20 on chromosome 20q13.1." XP002167892 abstract DOC. AGAINST INV. 56 (SEQ.IDs. 177, 59) ---	1, 2, 4-7, 10-14, 18
P, X	DATABASE EMBL 'Online! Accession Number AL137662, 27 January 2000 (2000-01-27) KOEHRER K. ET AL.: "Homo sapiens mRNA" XP002167893 abstract DOC. AGAINST INV. 57 (SEQ.IDs. 178, 60) ---	2, 6, 7, 11, 12
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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>NAGASE T. ET AL.: "Prediction of the coding sequences of unidentified human genes. VII. The complete sequences of 100 new cDNA clones from brain which can code for large proteins in vitro"</p> <p>DNA RESEARCH, vol. 4, no. 4, 28 April 1997 (1997-04-28), pages 141-150, XP002102085 ISSN: 1340-2838 the whole document -& DATABASE EMBL 'Online! Accession Number AB002342, 1 July 1997 (1997-07-01) NAGASE T. ET AL.: "Human mRNA for KIAA0344 gene." XP002167894 abstract DOC. AGAINST INV. 59 (SEQ.IDs. 180, 62)</p>	2,6,7, 11,12
X	<p>WO 98 36054 A (HOOPER JOHN DAVID ;AMRAD OPERATIONS PTY LTD (AU); ANTALIS TONI MAR) 20 August 1998 (1998-08-20) SEQ.IDs. 9 and 10 DOC. AGAINST INV. 60 (SEQ.IDs. 181, 63)</p>	1-14, 26-30, 35-38
X	<p>ANDERSON K. A. ET AL.: "Components of a calmodulin-dependent protein kinase cascade. Molecular cloning, functional characterization and cellular localization of Ca2+/calmodulin-dependent protein kinase kinase beta."</p> <p>JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 273, no. 48, 27 November 1998 (1998-11-27), pages 31880-31889, XP002167887 ISSN: 0021-9258 the whole document -& DATABASE EMBL 'Online! Accession Number AF140507, 21 May 1999 (1999-05-21) ANDERSON K. A. ET AL.: "Homo sapiens Ca2+/calmodulin-dependent protein kinase beta, complete cds." XP002167895 abstract DOC. AGAINST INV. 62 (SEQ.IDs. 183, 65)</p>	1-14,23, 26,27
P,X	<p>WO 99 58558 A (INCYTE PHARMA INC ;PATTERSON CHANDRA (US); YUE HENRY (US); BANDMAN) 18 November 1999 (1999-11-18) SEQ.IDs. 2 and 15 DOC. AGAINST INV. 62 (SEQ.IDs. 183, 65)</p>	2,6,7,9, 11,12, 26-28

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL 'Online! Accession Number AC004685, 15 May 1998 (1998-05-15) ADAMS M. D. AND LOFTUS B. J.: "Homo sapiens chromosome 16 BAC clone CIT987SK-A-233A8." XP002167896 abstract DOC. AGAINST INV. 63 (SEQ.IDs. 184, 66) ---	1,2,4-7
P,X	US 6 013 455 A (AZIMZAI YALDA ET AL) 11 January 2000 (2000-01-11) SEQ.IDs. 2 and 11 DOC. AGAINST INV. 63 (SEQ.IDs. 184, 66) ---	1-14, 26-30, 35-38
X	EP 0 870 825 A (SMITHKLINE BEECHAM CORP) 14 October 1998 (1998-10-14) figure 2 DOC. AGAINST INV. 65 (SEQ.IDs. 186, 68) DOC. AGAINST INV. 66 (SEQ.IDs. 187, 69) ---	1-14, 25-30, 35-38
X	DATABASE EMBL 'Online! Accession Number AA589241, 18 September 1997 (1997-09-18) MARRA M. ET AL.: "Mus musculus cDNA clone IMAGE:992145 5' similar to WP:F49E11.1 CE05897 serine/threonine protein kinase." XP002167897 abstract DOC. AGAINST INV. 66 (SEQ.IDs. 187, 69) ---	1,2,4,6, 7,10-13, 25
P,X	BERLANGA J. J. ET AL.: "Characterization of a mammalian homolog of the GCN2 eukaryotic initiation factor 2alpha kinase." EUROPEAN JOURNAL OF BIOCHEMISTRY, vol. 265, no. 2, October 1999 (1999-10), pages 754-762, XP002167888 ISSN: 0014-2956 the whole document DOC. AGAINST INV. 67 (SEQ.IDs. 188, 70) ---	1-14, 25-27,35
X	WO 94 05794 A (MASSACHUSETTS INST TECHNOLOGY) 17 March 1994 (1994-03-17) page 13, paragraph 2 examples 1,2 DOC. AGAINST INV. 68 (SEQ.IDs. 189, 71) --- -/--	1-14, 26-28, 35-38

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X	MELLOR H. ET AL.: "CLONING AND CHARACTERIZATION OF CDNA ENCODING RAT HEMIN-SENSITIVE INITIATION FACTOR-2ALPHA (EIF-2ALPHA) KINASE" JOURNAL OF BIOLOGICAL CHEMISTRY, vol. 269, no. 14, 8 April 1994 (1994-04-08), pages 10201-10204, XP002920790 ISSN: 0021-9258 the whole document DOC. AGAINST INV. 68 (SEQ.IDs. 189, 71) ---	1-4,6-13
X	DATABASE EMBL 'Online! Accession Number AA387681, 25 June 1997 (1997-06-25) MARRA M. ET AL.: "Mus musculus cDNA clone." XP002167898 abstract DOC. AGAINST INV. 70 (SEQ.IDs. 191, 73) ---	6,7
P,X	WO 00 09678 A (TULARIK INC) 24 February 2000 (2000-02-24) the whole document DOC. AGAINST INV. 71 (SEQ.IDs. 192, 74) ---	1-14,20, 26,27, 29,30, 35-38
X	DATABASE EMBL 'Online! Accession Number AF046653, 6 April 1998 (1998-04-06) ZAMBROWICZ B. P. ET AL.: "Mus musculus genomic clone OST10140." XP002167969 abstract DOC. AGAINST INV. 76 (SEQ.IDs. 197, 79) ---	1-4, 6-13,25
P,X	DATABASE EMBL 'Online! Accession Number AF238255, 12 April 2000 (2000-04-12) LIU T. C. ET AL.: "Homo sapiens mixed lineage kinase mRNA." XP002167970 abstract -& LIU T.-C. ET AL.: "Cloning and expression of ZAK, a mixed lineage kinase-like protein containing a leucine-zipper and a sterile-alpha motif." BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, vol. 274, 11 August 2000 (2000-08-11), pages 811-816, XP002167968 the whole document DOC. AGAINST INV. 77 (SEQ.IDs. 198, 80) ---	1-14
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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 00 14212 A (ACTON SUSAN ;MILLENNIUM PHARM INC (US)) 16 March 2000 (2000-03-16) figure 2 DOC. AGAINST INV. 77 (SEQ.IDs. 198, 80) figure 3 DOC. AGAINST INV. 106 (SEQ.IDs. 227, 109) ---	1-14, 25-30, 35-38
X	DATABASE EMBL 'Online! Accession Number AA270784, 28 March 1997 (1997-03-28) MARRA M. ET AL.: "Mus musculus cDNA clone IMAGE:736476." XP002167971 abstract DOC. AGAINST INV. 80 (SEQ.IDs. 201, 83) ---	6,7
P,X	PAZDERNIK N. J. ET AL.: "MOUSE RECEPTOR INTERACTING PROTEIN 3 DOES NOT CONTAIN A CASPASE-RECRUITING OR A DEATH DOMAIN BUT INDUCES APOPTOSIS AND ACTIVATES NF-(KAPPA)B" MOLECULAR AND CELLULAR BIOLOGY, vol. 19, no. 10, October 1999 (1999-10), pages 6500-6508, XP000939146 the whole document DOC. AGAINST INV. 80 (SEQ.IDs. 201, 83) ---	1-4, 6-13,22
X	DATABASE EMBL 'Online! Accession Number AL031297, 13 August 1998 (1998-08-13) COBLEY V.: "Human DNA sequence from clone 97P20 on chromosome1q23.2-24.3." XP002168227 abstract DOC. AGAINST INV. 81 (SEQ.IDs. 202, 84) ---	1-14
X	WO 99 04265 A (SAHIN UGUR ;TURECI OZLEM (DE); PFREUNDSCHUH MICHAEL (DE); GOUT IVA) 28 January 1999 (1999-01-28) SEQ.IDs. 431 and 435 DOC. AGAINST INV. 82 (SEQ.IDs. 203, 85) ---	2,6,7, 11,12
X	DATABASE EMBL 'Online! Accession Number AA195964, 28 January 1997 (1997-01-28) HILLIER L. ET AL.: "Homo sapiens cDNA clone IMAGE:628136" XP002168228 abstract DOC. AGAINST INV. 84 (SEQ.IDs. 205, 87) --- ---	6,7

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P,X	<p>DATABASE EMBL 'Online! Accession Number AK000342, 22 February 2000 (2000-02-22) SUGANO S. ET AL.: "Homo sapiens cDNA FLJ20335 fis, clone HEP11429." XP002168229 abstract DOC. AGAINST INV. 84 (SEQ.IDs. 205, 87)</p>	1-14
X	<p>DATABASE EMBL 'Online! Accession Number AF027406, 6 January 1999 (1999-01-06) BRENNER V. ET AL.: "Homo sapiens muscle-specific serine kinase 1 (MSSK1) mRNA." XP002168230 abstract DOC. AGAINST INV. 85 (SEQ.IDs. 206, 88)</p>	1-14
X	<p>DATABASE EMBL 'Online! Accession Number AF043288, 6 January 1999 (1999-01-06) BRENNER V. ET AL.: "Mus musculus muscle-specific serine kinase 1 mRNA." XP002168231 abstract DOC. AGAINST INV. 85 (SEQ.IDs. 206, 88)</p>	1-4,6-13
P,X	<p>WO 00 22143 A (INCYTE PHARMA INC ;AZIMZAI YALDA (US); CORLEY NEIL C (US); YUE HEN) 20 April 2000 (2000-04-20) SEQ.IDs. 1 and 10 DOC. AGAINST INV. 85 (SEQ.IDs. 206, 88) SEQ.IDs. 7 and 16 DOC. AGAINST INV. 104 (SEQ.IDs. 225, 107)</p>	1-4, 6-13, 26-28
X	<p>DATABASE EMBL 'Online! Accession Number AI553938, 25 March 1999 (1999-03-25) STAUSBERG R.: "Homo sapiens cDNA clone IMAGE:2090493 3' similar to TR:015367 TSK_1." XP002168388 abstract DOC. AGAINST INV. 86 (SEQ.IDs. 207, 89) DOC. AGAINST INV. 87 (SEQ.IDs. 208, 90) DOC. AGAINST INV. 91 (SEQ.IDs. 212, 94)</p>	1,2,4-7, 10-14,25

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X	<p>DATABASE EMBL 'Online! Accession Number AV040939, 14 May 1999 (1999-05-14) CARNINCI P. ET AL.: "Mus musculus adult male testis cDNA, partial sequence." XP002168389 abstract DOC. AGAINST INV. 87 (SEQ.IDs. 208, 90)</p> <p>---</p>	6,7
X	<p>DATABASE EMBL 'Online! Accession Number AA399596, 29 April 1997 (1997-04-29) HILLIER L. ET AL.: "Homo sapiens cDNA clone IMAGE:729913 5' similar to TR:G404634 Serine/threonine kinase." XP002168766 abstract DOC. AGAINST INV. 88 (SEQ.IDs. 209, 91)</p> <p>---</p>	1,2,4-7, 10-14,25
X	<p>KUENG P. ET AL: "A novel family of serine/threonine kinases participating in spermiogenesis." JOURNAL OF CELL BIOLOGY, vol. 139, no. 7, 29 December 1997 (1997-12-29), pages 1851-1859, XP002168387 ISSN: 0021-9525 the whole document DOC. AGAINST INV. 89 (SEQ.IDs. 210, 92)</p> <p>---</p>	1-14, 26-28, 35-38
X	<p>DATABASE EMBL 'Online! Accession Number AI652441, 5 May 1999 (1999-05-05) STRAUSBERG R.: "Homo sapiens cDNA clone IMAGE:2307063 3' similar to TR:P97417 serine/threonine kinase" XP002168390 abstract DOC. AGAINST INV. 89 (SEQ.IDs. 210, 92)</p> <p>---</p>	1,2,4-7, 10-14
X	<p>DATABASE EMBL 'Online! Accession Number L77564, 16 June 1996 (1996-06-16) GONG W. ET AL.: "Homo sapiens DGS-G mRNA, 3'-end." XP002168391 abstract DOC. AGAINST INV. 89 (SEQ.IDs. 210, 92)</p> <p>---</p> <p style="text-align: center;">-/--</p>	1,2,4-7, 10-14

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL 'Online! Accession Number AA905446, 9 April 1998 (1998-04-09) STRAUSBERG R.: "Homo sapiens cDNA clone IMAGE:1506197 3' similar to TR:P97417 serine threonine kinase." XP002168767 abstract DOC. AGAINST INV. 91 (SEQ.IDs. 212, 9) DOC. AGAINST INV. 86 (SEQ.IDs. 207, 89) ---	1,2,4-7, 10-14,25
X	DATABASE EMBL 'Online! Accession Number AI538521, 24 March 1999 (1999-03-24) STRAUSBERG R.: "Homo sapiens cDNA clone IMAGE:2074994 3' similar to SW:UN51_CAEEL Q23023 serine/threonine protein kinase UNC-51" XP002168768 abstract DOC. AGAINST INV. 92 (SEQ.IDs. 213, 95) DOC. AGAINST INV. 93 (SEQ.IDs. 214, 96) ---	1,2,4-7, 10-14,25
X	DATABASE EMBL 'Online! Accession Number AA498104, 3 July 1997 (1997-07-03) MARRA M. ET AL.: "Mus musculus cDNA clone IMAGE:918101." XP002168769 abstract DOC. AGAINST INV. 93 (SEQ.IDs. 214, 96) ---	6,7
X	DATABASE EMBL 'Online! Accession Number AA215311, 5 February 1997 (1997-02-05) STRAUSBERG R.: "Homo sapiens cDNA clone IMAGE:63368 5' similar to TR:E237261 calmodulin-domain protein kinase." XP002168770 abstract DOC. AGAINST INV. 94 (SEQ.IDs. 215, 97) ---	1,2,4-7, 10-14
P,X	WO 99 32609 A (KAROLINSKA INNOVATIONS AB ;ZAPHIROPOULOS PETER G (SE); TOFTGAARD R) 1 July 1999 (1999-07-01) SEQ.IDs. 1 and 2 DOC. AGAINST INV. 95 (SEQ.IDs. 216, 98) ---	1-14,18, 26-28, 35-38
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X	DATABASE EMBL 'Online! Accession Number AA018361, 10 August 1996 (1996-08-10) HILLIER L. ET AL.: "Homo sapiens cDNA clone IMAGE:361543 5' similar to SW:ASK1_ARATH P43291 serine/threonine kinase ASK2." XP002169144 abstract DOC. AGAINST INV. 95 (SEQ.IDs. 216, 98) ---	1,2,4-7, 10-14,18
X	DATABASE EMBL 'Online! Accession Number AI651075, 5 May 1999 (1999-05-05) STRAUSBERG R.: "Homo sapiens cDNA clone IMAGE:2304078 3' similar to TR:060679 serum inducible kinase." XP002169145 abstract DOC. AGAINST INV. 97 (SEQ.IDs. 218, 100) ---	1,2,4-7, 10-14,25
X	DATABASE EMBL 'Online! Accession Number W08549, 27 April 1996 (1996-04-27) MARRA M. ET AL.: "Mus musculus cDNA clone IMAGE:332593." XP002169146 abstract DOC. AGAINST INV. 98 (SEQ.IDs. 219, 101) ---	6,7
X	DATABASE EMBL 'Online! Accession Number AC002355, 24 July 1997 (1997-07-24) HAWKINS T. L. ET AL.: "Homo sapiens chromosome 9 clone 107G20 map 9q34" XP002169147 abstract DOC. AGAINST INV. 99 (SEQ.IDs. 220, 102) ---	1-7
X	DATABASE EMBL 'Online! Accession Number AI606679, 26 April 1999 (1999-04-26) MARRA M. ET AL.: "Mus musculus cDNA clone IMAGE:516008." XP002169148 abstract DOC. AGAINST INV. 100 (SEQ.IDs. 221, 103) --- -/--	6,7

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE EMBL 'Online! Accession Number AA493011, 2 July 1997 (1997-07-02) MARRA. M. ET AL.: "Mus musculus cDNA clone IMAGE:917574." XP002169149 abstract DOC. AGAINST INV.100 (SEQ.IDs. 221, 103) ---	6,7
X	DATABASE EMBL 'Online! Accession Number AA396601, 28 April 1997 (1997-04-28) MARRA M. ET AL.: "Mus musculus cDNA clone IMAGE:570118." XP002169150 abstract DOC. AGAINST INV.102 (SEQ.IDs. 223, 105) ---	6,7
E	EP 1 033 401 A (GENSET SA) 6 September 2000 (2000-09-06) SEQ.ID.6560 DOC. AGAINST INV.102 (SEQ.IDs. 223, 105) ---	2,6,7, 11,12
X	DATABASE EMBL 'Online! Accession Number AA276191, 3 April 1997 (1997-04-03) MARRA M. ET AL.: " Mus musculus cDNA clone IMAGE:776192 5' similar t SW:KRBI_VACCC P20505 30 KD prtein kinase homolog." XP002169151 abstract DOC. AGAINST INV.104 (SEQ.IDs. 225, 107) ---	1-4,6-13
X	DATABASE EMBL 'Online! Accession Number AA399022, 29 April 1997 (1997-04-29) HILLIER L. ET AL.: "Homo sapiens cDNA clone IMAGE:729929." XP002169312 abstract DOC. AGAINST INV.106 (SEQ.IDs. 227, 109) ---	6,7
X	WO 97 47750 A (IMMUNEX CORP) 18 December 1997 (1997-12-18) the whole document DOC. AGAINST INV.108 (SEQ.IDs. 229, 111) ---	1-14, 25-30, 35-38

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X	<p>DATABASE EMBL 'Online! Accession Number AI298668, 4 December 1998 (1998-12-04) STRAUSBERG R.: "Homo sapiens cDNA clone IMAGE:1895716 3' similar to SW:NEK1_Mouse P51945 serine/threonine-protein kinase NEK1." XP002169313 abstract DOC. AGAINST INV.108 (SEQ.IDs. 229, 111)</p>	1,2,4-7, 10-14,25
X	<p>WANG X. S. ET AL.: "MAPKKK6, a novel mitogen-activated protein kinase kinase kinase, that associates with MAPKKK5." BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, vol. 253, no. 1, 9 December 1998 (1998-12-09), pages 33-37, XP002169311 ISSN: 0006-291X the whole document DOC. AGAINST INV.109 (SEQ.IDs. 230, 112)</p>	1-14,25
X	<p>DATABASE EMBL 'Online! Accession Number AI638161, 29 April 1999 (1999-04-29) STRAUSBERG R.: "Homo sapiens cDNA clone IMAGE:2239185 3' similar to SW:PAK3_Human 075914 serine/threonine-protein kinase." XP002169314 abstract DOC. AGAINST INV.110 (SEQ.IDs. 231, 113)</p>	1,2,4-7, 10-14
P,X	<p>NAGASE T. ET AL.: "PREDICTION OF THE CODING SEQUENCES OF UNIDENTIFIED HUMAN GENES. XV. THE COMPLETE SEQUENCES OF 100 NEW CDNA CLONES FROM BRAIN WHICH CODE FOR LARGE PROTEINS IN VITRO" DNA RESEARCH, vol. 6, 29 October 1999 (1999-10-29), pages 337-345, XP000865804 ISSN: 1340-2838 -& DATABASE EMBL 'Online! Accession Number AB033090, 11 November 1999 (1999-11-11) OHARA O. ET AL.: "Homo sapiens mRNA for KIAA1264 protein." XP002169637 abstract DOC. AGAINST INV.110 (SEQ.IDs. 231, 113)</p>	1-14

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE EMBL 'Online! Accession Number H29272, 19 July 1995 (1995-07-19) HILLIER L. ET AL.: "Homo sapiens cDNA clone IMAGE:49948." XP002169315 abstract DOC. AGAINST INV.111 (SEQ.IDs. 232, 114) ---</p>	6,7
P,X	<p>WO 99 64589 A (ZENECA LTD) 16 December 1999 (1999-12-16) the whole document DOC. AGAINST INV.111 (SEQ.IDs. 232, 114) DOC. AGAINST INV.112 (SEQ.IDs. 233, 115) ---</p>	1-14,23, 26-30, 35-38
X	<p>DATABASE EMBL 'Online! Accession Number AA098024, 27 October 1996 (1996-10-27) MARRA M. ET AL.: "Mus musculus cDNA clone IMAGE:550913 5' similar to SW:DROME P18475 tyrosine-protein kinase receptor torso precursor." XP002169442 abstract DOC. AGAINST INV.112 (SEQ.IDs. 233, 115) ---</p>	1-4, 6-13,23
X	<p>DATABASE EMBL 'Online! Accession Number Z98752, 23 August 1997 (1997-08-23) RAMSAY H.: "Human DNA sequence from clone RP1-138B7 on chromosome 20q13.12." XP002169443 nts. 43893 - 62413 DOC. AGAINST INV.113 (SEQ.IDs. 234, 116) ---</p>	1-14
X	<p>DATABASE EMBL 'Online! Accession Number AF035013, 4 January 1999 (1999-01-04) JIANG Y. AND ZHAO K.: "Homo sapiens cell cycle related kinase mRNA, complete cds." XP002169444 abstract DOC. AGAINST INV.114 (SEQ.IDs. 235, 117) -----</p>	1-14,24

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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 31-34
because they do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
~~see FURTHER INFORMATION sheet PCT/ISA/010~~
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
- X
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos. 1-18 (partially), 17 (completely), 19 and 20 (partially), 20 and 22 (completely), 23-38 (partially)
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☒ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: Invention 1: Claims 1-14,26-38 (all partially)

A nucleic acid molecule encoding a kinase polypeptide as represented by SEQ.ID.122 or a domain thereof; a vector and a recombinant cell comprising said nucleic acid molecule; a nucleic acid probe for the detection of said nucleic acid molecule; a polypeptide as represented by SEQ.ID.122 or a fragment thereof; an antibody or antibody fragment having specific binding affinity to said polypeptide; a hybridoma which produces said antibody; methods for identifying a substance that modulates the kinase activity of said polypeptide; methods for treating a disease or disorder by administering such a substance; and methods for the detection of a kinase polypeptide as represented by SEQ.ID.122.

2. Claims: Inventions 2-78: Claims 1-20,
23-38 (all partially and as far as applicable)

A nucleic acid molecule encoding a kinase with a polypeptide sequence selected from SEQ.IDs.123-199, wherein invention 2 is limited to SEQ.ID. 123, invention 3 is limited to SEQ.ID. 124,, and invention 78 is limited to SEQ.ID.199, or a domain thereof; a vector and a recombinant cell comprising said nucleic acid molecule; a nucleic acid probe for the detection of said nucleic acid molecule; a polypeptide as represented by a polypeptide sequence selected from SEQ.IDs.123-199 or a fragment thereof; an antibody or antibody fragment having specific binding affinity to said polypeptide; a hybridoma which produces said antibody; methods for identifying a substance that modulates the kinase activity of said polypeptide; methods for treating a disease or disorder by administering such a substance; and methods for the detection of a kinase polypeptide represented by a polypeptide sequence selected from SEQ.IDs.123-199.

3. Claims: Invention 79: Claim 21 (completely) and Claims
1-14,26-38 (all partially)

A nucleic acid molecule encoding a kinase polypeptide as represented by SEQ.ID.200 or a domain thereof; a vector and a recombinant cell comprising said nucleic acid molecule; a nucleic acid probe for the detection of said nucleic acid molecule; a polypeptide as represented by SEQ.ID.200 or a fragment thereof; an antibody or antibody fragment having

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

specific binding affinity to said polypeptide; a hybridoma which produces said antibody; methods for identifying a substance that modulates the kinase activity of said polypeptide; methods for treating a disease or disorder by administering such a substance; and methods for the detection of a kinase polypeptide as represented by SEQ.ID.200.

4. Claims: Invention 80: Claim 22 (completely) and Claims 1-14,26-38 (all partially)

A nucleic acid molecule encoding a kinase polypeptide as represented by SEQ.ID.201 or a domain thereof; a vector and a recombinant cell comprising said nucleic acid molecule; a nucleic acid probe for the detection of said nucleic acid molecule; a polypeptide as represented by SEQ.ID.201 or a fragment thereof; an antibody or antibody fragment having specific binding affinity to said polypeptide; a hybridoma which produces said antibody; methods for identifying a substance that modulates the kinase activity of said polypeptide; methods for treating a disease or disorder by administering such a substance; and methods for the detection of a kinase polypeptide as represented by SEQ.ID.201.

5. Claims: Inventions 81-121: Claims 1-20, 23-38 (all partially and as far as applicable)

A nucleic acid molecule encoding a kinase with a polypeptide sequence selected from SEQ.IDs.202-242, wherein invention 81 is limited to SEQ.ID. 202, invention 82 is limited to SEQ.ID. 203,, and invention 121 is limited to SEQ.ID.242, or a domain thereof; a vector and a recombinant cell comprising said nucleic acid molecule; a nucleic acid probe for the detection of said nucleic acid molecule; a polypeptide as represented by a polypeptide sequence selected from SEQ.IDs.202-242 or a fragment thereof; an antibody or antibody fragment having specific binding affinity to said polypeptide; a hybridoma which produces said antibody; methods for identifying a substance that modulates the kinase activity of said polypeptide; methods for treating a disease or disorder by administering such a substance; and methods for the detection of a kinase polypeptide represented by a polypeptide sequence selected from SEQ.IDs.202-242.

6. Claims: Inventions 122-136: Claims 15-20, 23-25 (all partially) and claims 1-14, 26-38 (if applicable)

FURTHER INFORMATION CONTINUED FROM PCT/SA/ 210

A nucleic acid molecule encoding a kinase polypeptide as represented by a 'gene name' selected from 'AA980090', 'AA045601', 'AA297313', 'N23936', '5R72-18-1', '5R79-54-1', '5R65-16-1', 'AA065538', 'H17727', 'W08549', 'AA430250', 'AA139478', 'R87679', 'W65887', 'AA948538', '5R69-23-3', and '5R69-26-2', wherein invention 122 is limited to 'AA980090', invention 123 is limited to 'AA045601', and invention 136 is limited to '5R69-26-2', or a domain thereof; a vector and a recombinant cell comprising said nucleic acid molecule; a nucleic acid probe for the detection of said nucleic acid molecule; a polypeptide encoded by said nucleic acid molecule or a fragment thereof; an antibody or antibody fragment having specific binding affinity to said polypeptide; a hybridoma which produces said antibody; methods for identifying a substance that modulates the kinase activity of said polypeptide; methods for treating a disease or disorder by administering such a substance; and methods for the detection of a said polypeptide.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 31-34

The search was based on the sequence listing furnished in computer readable form, the numbering of which differs from the numbering in the figures.

Claims 31-34 refer to a 'substance that modulates the activity of a kinase' without giving a true technical characterization. Moreover, no such specific compounds are defined in the application. In consequence, the scope of said claims is ambiguous and vague, and their subject-matter is not sufficiently disclosed and supported (Art. 5 and 6 PCT). No search can be carried out for such purely speculative claims whose wording is, in fact, a mere recitation of the results to be achieved.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

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